

gcc aat gat ttt aaa act gga gat aaa ata gct gtg ttc tcc gtc cca 288
Ala Asn Asp Phe Lys Thr Gly Asp Lys Ile Ala Val Phe Ser Val Pro
85 90 95

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ttt gat tgg aac tat tta tca aaa gga aaa gtc aca gca tat acc tat 336
Phe Asp Trp Asn Tyr Leu Ser Lys Gly Lys Val Thr Ala Tyr Thr Tyr
100 105 110

ggt gga ata aca ccc tac caa aaa act tca ata cct aaa aat atc cct 384
Gly Gly Ile Thr Pro Tyr Gln Lys Thr Ser Ile Pro Lys Asn Ile Pro
115 120 125

gtt aat tta tgg att aat gga aag cag atc tct gtt cct tac aac gaa 432
Val Asn Leu Trp Ile Asn Gly Lys Gln Ile Ser Val Pro Tyr Asn Glu
130 135 140

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Ile Ser Thr Asn Lys Thr Thr Val Thr Ala Gln Glu Ile Asp Leu Lys
145 150 155 160

gtt aga aaa ttt tta ata gca caa cat caa tta tat tct tct ggt tct 528
Val Arg Lys Phe Leu Ile Ala Gln His Gln Leu Tyr Ser Ser Gly Ser
165 170 175

agc tac aaa agt ggt aga ctg gtt ttt cat aca aat gat aat tca gat 576
Ser Tyr Lys Ser Gly Arg Leu Val Phe His Thr Asn Asp Asn Ser Asp
180 185 190

aaa tat tct ttc gat ctt ttc tat gta gga tat aga gat aaa gaa agt 624
Lys Tyr Ser Phe Asp Leu Phe Tyr Val Gly Tyr Arg Asp Lys Glu Ser
195 200 205

atc ttt aaa gta tac aaa gac aat aaa tct ttc aat ata gat aaa att 672
Ile Phe Lys Val Tyr Lys Asp Asn Lys Ser Phe Asn Ile Asp Lys Ile
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<213> Streptococcus pyogenes

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Leu Arg Asn Ile Tyr Ser Thr Ile Val Tyr Glu Tyr Ser Asp Ile Val
35 40 45

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Tyr	Gly	Ser	Gln	Leu	Ala	Tyr	Ala	Asp	Glu	Asn	Leu	Lys	Asp	Leu	Lys	
			20					25					30			
aga	agt	tta	aga	ttt	gcc	tat	aat	att	acc	cca	tgc	gat	tat	gaa	aat	144
Arg	Ser	Leu	Arg	Phe	Ala	Tyr	Asn	Ile	Thr	Pro	Cys	Asp	Tyr	Glu	Asn	
		35					40					45				
gta	gaa	att	gca	ttt	gtt	act	aca	aat	agc	ata	cat	att	aat	act	aaa	192
Val	Glu	Ile	Ala	Phe	Val	Thr	Thr	Asn	Ser	Ile	His	Ile	Asn	Thr	Lys	
	50					55				60						

Tyr Gly Ser Gln Leu Ala Tyr Ala Asp Glu Asn Leu Lys Asp Leu Lys
20 25 30

Arg Ser Leu Arg Phe Ala Tyr Asn Ile Thr Pro Cys Asp Tyr Glu Asn
 35 40 45
 Val Glu Ile Ala Phe Val Thr Thr Asn Ser Ile His Ile Asn Thr Lys
 50 55 60
 Gln Lys Arg Ser Glu Cys Ile Leu Tyr Val Asp Ser Ile Val Ser Leu
 65 70 75 80
 Gly Ile Thr Asp Gln Phe Ile Lys Gly Asp Lys Val Asp Val Phe Gly
 85 90 95
 Leu Pro Tyr Asn Phe Ser Pro Pro Tyr Val Asp Asn Ile Tyr Gly Gly
 100 105 110
 Ile Val Lys His Ser Asn Gln Gly Asn Lys Ser Leu Gln Phe Val Gly
 115 120 125
 Ile Leu Asn Gln Asp Gly Lys Glu Thr Tyr Leu Pro Ser Glu Ala Val
 130 135 140
 Arg Ile Lys Lys Lys Gln Phe Thr Leu Gln Glu Phe Asp Phe Lys Ile
 145 150 155 160
 Arg Lys Phe Leu Met Glu Lys Tyr Asn Ile Tyr Asp Ser Glu Ser Arg
 165 170 175
 Tyr Thr Ser Gly Ser Leu Phe Leu Ala Thr Lys Asp Ser Lys His Tyr
 180 185 190
 Glu Val Asp Leu Phe Asn Lys Asp Asp Lys Leu Leu Ser Arg Asp Ser
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 Phe Phe Lys Arg Tyr Lys Asp Asn Lys Ile Phe Asn Ser Glu Glu Ile
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 1 5 10 15
 atg att ata tgt ttg tca ttt ctt tta tat tcc aat gtt gtt caa gca 96
 Met Ile Ile Cys Leu Ser Phe Leu Leu Tyr Ser Asn Val Val Gln Ala
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Met Ile Ile Cys Leu Ser Phe Leu Leu Tyr Ser Asn Val Val Gln Ala
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Asn Ser Tyr Asn Thr Thr Asn Arg His Asn Leu Glu Ser Leu Tyr Lys
 35 40 45

His Asp Ser Asn Leu Ile Glu Ala Asp Ser Ile Lys Asn Ser Pro Asp
 50 55 60

Ile Val Thr Ser His Met Leu Lys Tyr Ser Val Lys Asp Lys Asn Leu
 65 70 75 80

Ser Val Phe Phe Glu Lys Asp Trp Ile Ser Gln Glu Phe Lys Asp Lys
 85 90 95

Glu Val Asp Ile Tyr Ala Leu Ser Ala Gln Glu Val Cys Glu Cys Pro
 100 105 110

Gly Lys Arg Tyr Glu Ala Phe Gly Gly Ile Thr Leu Thr Asn Ser Glu
 115 120 125

Lys Lys Glu Ile Lys Val Pro Val Asn Val Trp Asp Lys Ser Lys Gln
 130 135 140

Gln Pro Pro Met Phe Ile Thr Val Asn Lys Pro Lys Val Thr Ala Gln
 145 150 155 160

Glu Val Asp Ile Lys Val Arg Lys Leu Leu Ile Lys Lys Tyr Asp Ile
 165 170 175

Tyr Asn Asn Arg Glu Gln Lys Tyr Ser Lys Gly Thr Val Thr Leu Asp
 180 185 190

Leu Asn Ser Gly Lys Asp Ile Val Phe Asp Leu Tyr Tyr Phe Gly Asn
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Asp Ser Thr Gln Phe His Val Asp Val Ser Ile Ser
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Arg Gln Tyr Leu Met Gln Thr Tyr Lys Ile Tyr Asp Pro Asn Ser Pro
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 Ser Phe Asn Leu Tyr Asp Ala Thr Ser Ser Ser Thr Arg Ser Asp Ile
 100 105 110

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130 135

<213> Streptococcus pyogenes

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Val Thr Pro Ser Val Asn Ser Asn Ser Glu Asn Ser Lys Ile Val Gly
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35 40 45

Lys Ile Asp Lys Pro Ile Phe Thr Ile Gln Glu Phe Asp Phe Lys Ile
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Arg Gln Tyr Leu Met Gln Thr Tyr Lys Ile Tyr Asp Pro Asn Ser Pro
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Lys	Ile	Ala	Met	Phe	Ser	Val	Pro	Phe	Asp	Trp	Asn	Tyr	Leu	Ser	Glu
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Gly	Lys	Val	Ile	Ala	Tyr	Thr	Tyr	Gly	Met	Thr	Pro	Tyr	Gln	Glu	Glu
				85					90					95	
Pro	Met	Ser	Lys	Asn	Ile	Pro	Val	Leu	Trp	Ile	Asn	Arg	Arg	Gln	Ile
			100					105					110		
Pro	Val	Pro	Tyr	Asn	Gln	Ile	Ser	Thr	Asn	Lys	Thr	Thr	Val	Thr	Ala
		115					120					125			
Gln	Glu	Ile	Asp	Leu	Lys	Val	Lys	Phe	Leu	Ile	Ser	Gln	His	Gln	Leu
	130					135					140				
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Asp	Asn	Ser	Asp	Lys	Tyr	Ser	Leu	Asp	Leu	Phe	Tyr	Val	Gly	Tyr	Arg
				165					170					175	
Asp	Lys	Glu	Ser	Ile	Phe	Lys	Val	Tyr	Lys	Asp	Lys	Ser	Phe	Asn	Ile
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 Asp Leu Leu Val Asp Phe Asp Ser Lys Asp Ile Val Asp Lys Tyr Lys
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 Asp Asn Asn Arg Leu Thr Glu Glu Lys Lys Val Pro Ile Asn Leu Trp
 115 120 125
 Leu Asp Lys Gln Asn Thr Val Pro Leu Glu Thr Val Lys Thr Asn Lys
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 Glu Lys Tyr Asn Leu Asn Ser Asp Val Phe Asp Gly Lys Val Gln Arg
 165 170 175
 Gly Leu Ile Val Phe His Thr Ser Thr Glu Pro Ser Val Asn Tyr Asp
 180 185 190
 Leu Phe Gly Ala Gln Gly Gln Asn Ser Asn Thr Leu Leu Arg Ile Tyr
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 210 215 220
 Tyr Thr Ser
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<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: Primer

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24

<210> 13

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